



SEQUENCE LISTING

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POPOFF, MICHEL-ROBERT

<120> CLOSTRIDIUM TOXIN AND PROCESS FOR THE PREPARATION OF IMMUNOGENIC
COMPOSITIONS

<130> 0660-0172-0CONT

<140> 09/531,438

<141> 2000-03-20

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<151> 1998-09-17

<150> FR971170

<151> 1997-09-19

<160> 8

<170> PatentIn version 3.2

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<212> DNA

<213> Clostridium perfringens

<220>

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<222> (268)..(1065)

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gatatatata ttatatagct gaaaatttat aattatatga taagtatagt taataaataa 120

aaagtgttct cgggggacac ttttttggtt taaaaaggaa aatataaata aaatttagat 180

aaaagtgtaa aataattatt tttattttta atttgttaaa aatttgatat aattgaattg 240

taaaaaaaaat ttcagggggg aatataa atg aaa aaa att att tca aag ttt act 294

Met Lys Lys Ile Ile Ser Lys Phe Thr
1 5

gta att ttt atg ttt tca tgt ttt ctt att gtt gga gca ata agt cca. 342

Val Ile Phe Met Phe Ser Cys Phe Leu Ile Val Gly Ala Ile Ser Pro
10 15 20 25

atg aaa gca agt gca aaa gaa atc gac gct tat aga aag gta atg gag 390

Met Lys Ala Ser Ala Lys Glu Ile Asp Ala Tyr Arg Lys Val Met Glu
30 35 40

aat tat ctt aat gct tta aaa aac tac gat att aat aca gtt gta aac 438

Asn Tyr Leu Asn Ala Leu Lys Asn Tyr Asp Ile Asn Thr Val Val Asn
45 50 55

att tca gaa gat gaa aga gta aat aat gtt gaa cag tat aga gaa atg 486

Ile Ser Glu Asp Glu Arg Val Asn Asn Val Glu Gln Tyr Arg Glu Met
60 65 70

tta gaa gat ttt aaa tat gat cct aac caa caa ctg aaa tct ttt gaa Leu Glu Asp Phe Lys Tyr Asp Pro Asn Gln Gln Leu Lys Ser Phe Glu 75 80 85	534
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act gaa ttt tta aat ggt gca att tat gat atg gaa ttt act gta tca Thr Glu Phe Leu Asn Gly Ala Ile Tyr Asp Met Glu Phe Thr Val Ser 110 115 120	630
tct aaa gat gga aaa tta ata gta tct gat atg gaa aga aca aaa gtt Ser Lys Asp Gly Lys Leu Ile Val Ser Asp Met Glu Arg Thr Lys Val 125 130 135	678
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caa aca tat tct gat aga ttt aca tat tat gca gat aat ata tta tta Gln Thr Tyr Ser Asp Arg Phe Thr Tyr Tyr Ala Asp Asn Ile Leu Leu 170 175 180 185	822
aac ttc aga caa tat gca act tca ggt tca aga gat tta aaa gta gaa Asn Phe Arg Gln Tyr Ala Thr Ser Gly Ser Arg Asp Leu Lys Val Glu 190 195 200	870
tat agt gtt gta gat cat tgg atg tgg aaa gat gat gtt aaa gct tct Tyr Ser Val Val Asp His Trp Met Trp Lys Asp Asp Val Lys Ala Ser 205 210 215	918
caa atg gta tat ggt caa aat cct gat tct gct aga caa ata aga tta Gln Met Val Tyr Gly Gln Asn Pro Asp Ser Ala Arg Gln Ile Arg Leu 220 225 230	966
tat ata gaa aaa gga caa tct ttc tat aaa tat aga ata aga att aaa Tyr Ile Glu Lys Gly Gln Ser Phe Tyr Lys Tyr Arg Ile Arg Ile Lys 235 240 245	1014
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 35 40 45

Asn Tyr Asp Ile Asn Thr Val Val Asn Ile Ser Glu Asp Glu Arg Val
 50 55 60

Asn Asn Val Glu Gln Tyr Arg Glu Met Leu Glu Asp Phe Lys Tyr Asp
 65 70 75 80

Pro Asn Gln Gln Leu Lys Ser Phe Glu Ile Leu Asn Ser Gln Lys Ser
 85 90 95

Asp Asn Lys Glu Ile Phe Asn Val Lys Thr Glu Phe Leu Asn Gly Ala
 100 105 110

Ile Tyr Asp Met Glu Phe Thr Val Ser Ser Lys Asp Gly Lys Leu Ile
 115 120 125

Val Ser Asp Met Glu Arg Thr Lys Val Glu Asn Glu Gly Lys Tyr Ile
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Leu Thr Pro Ser Phe Arg Thr Gln Val Cys Thr Trp Asp Asp Glu Leu
 145 150 155 160

Ala Gln Ala Ile Gly Gly Val Tyr Pro Gln Thr Tyr Ser Asp Arg Phe
 165 170 175

Thr Tyr Tyr Ala Asp Asn Ile Leu Leu Asn Phe Arg Gln Tyr Ala Thr
 180 185 190

Ser Gly Ser Arg Asp Leu Lys Val Glu Tyr Ser Val Val Asp His Trp
 195 200 205

Met Trp Lys Asp Asp Val Lys Ala Ser Gln Met Val Tyr Gly Gln Asn

210

215

220

Pro Asp Ser Ala Arg Gln Ile Arg Leu Tyr Ile Glu Lys Gly Gln Ser
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<212> DNA

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aaaagtgtaa aataattatt tttatttttaa atttgtttaa aatttgatat aattgaattg 240

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 aaagtgttct cgggggacac ttttttgttt taaaaaggaa aatataaata aaatttagat 180
 aaaagtgtaa aataattatt tttatttttaa atttgtttaa aatttgatat aattgaattg 240
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